Acknowledgments

Without the most generous cooperation of the persons and their institutions listed here, this study would not have been possible. To all of them I express my sincere thanks and deep gratitude for loans of type material and information vital to this study. Dr. Paul H. Arnaud, Department of Entomology, California Academy of Sciences, Golden Gate Park, San Francisco, California; Drs. R. D. Goeden and D. W. Ricker, Department of Entomology, Division of Biological Control, University of California, Riverside, California; Dr. J. Linsley Gressitt and Mrs. Carol Higa, Entomology Department, Bernice P. Bishop Museum, Honolulu, Hawaii; Dr. W. J. Knight and Dr. R. G. Fennah, Department of Entomology, British Museum (Nat. Hist.), London; Dr. Per Inge Persson, Department of Entomology, Swedish Museum of Natural History, Stockholm; and Dr. Charles A. Triplehorn, Department of Entomology, Ohio State University, Columbus, Ohio.

References

All citations can be found in Metcalf, Z. P. 1944. Author's list, A–Z. A bibliography of the Homoptera (Auchenorhyncha) 1: 1–886.

SAWFLIES OF CHILE: A NEW GENUS AND SPECIES AND KEY TO GENERA OF TENTHREDINIDAE (HYMENOPTERA: SYMPHYTA)

David R. Smith

Systematic Entomology Laboratory, Agricultural Research Service, USDA[1]

ABSTRACT—**Ucona acaenae**, new genus and new species, is described from Chile. This species was recorded under the name "*Antholcus varinervis* (Spinola)" in the literature relating to its importation into New Zealand where it was used as a biological control agent for *Acaena* spp. A key to the six genera of the family Tenthredinidae known from Chile is also included.

The sawfly family Tenthredinidae is not well represented in Chile. About 10 species are known, 3 of which are very similar in size and coloration and have often been confused. These species have the head and thorax shining black and most of the abdomen a contrasting red or orange. One species has long, erect black hairs covering the head, thorax and legs and has trifid tarsal claws. This is the species I am treating as *Trichotaxonus coquimbensis* (Spinola) (Smith, 1973). The other two species, both with short, inconspicuous hairs and bifid tarsal claws, are the main subject of this paper.

In 1851, Spinola described *Tenthredo varinervia* from Chile, a species

[1] Mail address: c/o U. S. National Museum, Washington, D. C. 20560.

which Konow (1904) recognized as belonging to a distinct genus which he called *Antholcus*. Konow also emended the species name to *varinervis*. In the late 1920's, a sawfly was found in Chile feeding on *Acaena*, a troublesome weed in New Zealand. This sawfly was imported to New Zealand for use as a biological control agent under the name *Antholcus varinervis* (Spinola). (The species name *varinervia* is an adjective and in combination with *Antholcus* it should be *A. varinervius*.)

While studying certain South American sawflies and attempting to identify some collections from Chile, I found that the name *varinervis* was incorrectly applied to the *Acaena*-feeding species. Though I was unable to locate the type of *varinervia* Spinola, it is evident from Spinola's description that the *Acaena*-feeding species is not the species he described. In *varinervia*, the abdomen is orange, the legs are orange except for each coxa, trochanter, and hindtarsus, the clypeus is emarginated, the third antennal segment is longer than the fourth segment, and, in the forewing, the second cubital cell receives both recurrent veins. In the *Acaena*-feeding species, the apex of the abdomen is black, the legs are mostly black except for the reddish hindtibia, the clypeus is truncated, the third antennal segment is the same length as the fourth segment, and, in the forewing, the second and third cubital cells each receive 1 recurrent vein. The only character mentioned by Spinola not in perfect agreement with my interpretation of *varinervia* is the petiolate anal cell of the forewing. However, after examining a number of specimens, I found that this character could apply to both species, but less so to *varinervia*. In the forewing of *varinervia*, vein 2A & 3A is complete, connected to 1A by an oblique crossvein, but, in some specimens, the portion of 2A & 3A basal to the crossvein is partially obliterated and the anal cell appears petiolate. Spinola may have seen specimens in which this vein was not evident. The *Acaena*-feeding species always has a petiolate anal cell in the forewing and vein 2A & 3A is atrophied with only the basal stub present, and this is curved up at its apex.

The sawfly imported into New Zealand represents a new genus and species and is described below. All references to the species feeding on *Acaena* and its importation into New Zealand apply to this new species.

Ucona Smith, new genus

Antenna long, slender, filiform, length about 3 times head width; first and second segments each longer than broad; third segment subequal in length to fourth segment; segments beyond third gradually decreasing in length. Clypeus truncate; malar space short, less than ½ diameter of front ocellus; no genal carina; postocellar area broader than long; each mandible bidentate; eyes small, far apart, scarcely converging below; distance between eyes below much greater than length of an eye. No prepectus; cenchri separated by distance greater than breadth of one.

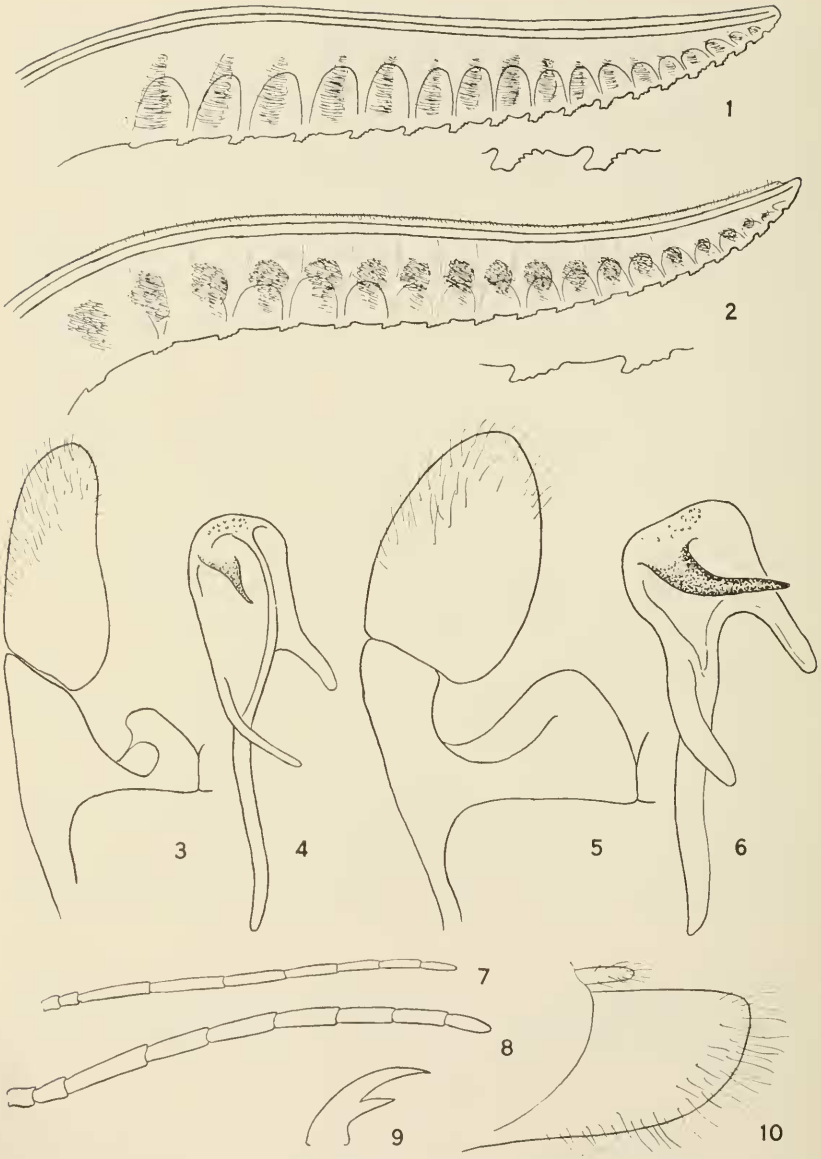


Fig. 1, lancet of *Ucona acaenae*. Fig. 2, lancet of *Antholcus varinervius*. Fig. 3, harpe and parapenis of *U. acaenae*. Fig. 4, penis valve of *U. acaenae*. Fig. 5, harpe and parapenis of *A. varinervius*. Fig. 6, penis valve of *A. varinervius*. Fig. 7, antenna of *U. acaenae*. Fig. 8, antenna of *A. varinervius*. Fig. 9, tarsal claw of *U. acaenae*. Fig. 10, sheath of *U. acaenae*.

Tarsal claw bifid, inner tooth shorter than outer tooth; no basal lobe; hindbasitarsus subequal in length to remaining segments combined; hindtibial spurs equal to width of hindtibia at apex. Basal plates separated on meson, leaving triangularly shaped membranous area. Forewing with anal cell petiolate, basal stub of vein 2A & 3A curved up at apex; second and third cubital cells each receiving 1 recurrent vein. Hindwing of female without cell M; anal cell petiolate with petiole subequal to cell width; apex of radial cell close to apical margin of wing. Hindwing of male with partial peripheral vein, open only between cells R and M.

Type-species: *Ucona acaenae*, new species. The only known species.

This genus is properly placed in the subfamily Blennocampinae of the Tenthredinidae where it resembles the genus *Periclista* Konow. *Periclista*, however, has the third antennal segment longer than the fourth segment, the clypeus usually emarginated, usually a longer malar space, the eyes closer together with the distance between them equal to or shorter than the length of an eye, the tarsal claws with a basal lobe, and the male with a complete peripheral vein in the hindwing. The genus *Antholcus* in the subfamily Allantinae has stouter antennae with the third segment longer than the fourth segment, an emarginated clypeus, postocellar area at least as long as broad, usually complete vein 2A & 3A in the forewing connected to 1A by an oblique crossvein, a distinct acute basal lobe on the tarsal claws, sometimes appearing as a third tooth, hindwing of female with cell M, and of male with complete peripheral vein.

The name is an arbitrary combination of letters. Gender, feminine.

Ucona acaenae Smith, new species

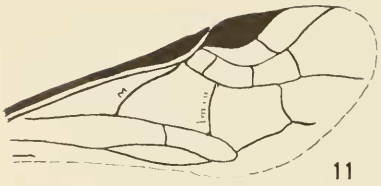
Female.—Length, 7.2 mm. Antenna and head black. Thorax black with tegula and paraptera brownish. Legs black with extreme apex of front and middle femora and base and outer surfaces of front and middle tibiae whitish; hindtibia orange. Abdomen orange with basal plates, apical 2 segments, and sheath black. Wings darkly, uniformly infuscated; veins and stigma black.

Sheath uniformly slender from above, in lateral view, dorsal and ventral margins nearly straight with apex broadly rounded (fig. 10). Serrulae of lancet each truncate at apex, directed anteriorly, with no anterior and 7 or 8 posterior subbasal teeth; distance between serrulae longer than breadth of a serrula (fig. 1).

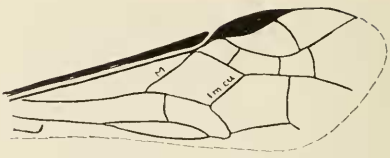
Male.—Length, 7.0 mm. Color as for female. Structure as for female except for hindwing which has a partial peripheral vein, absent only between cells R and M. Genitalia as in figs. 3, 4; penis valve with short lateral, anteriorly projecting spine and long, slender dorsal membranous lobe.

Holotype.—Female, labeled "Temuco, Chile, Bro. C. Joseph," "Nelson, N. Z., em. April 1931." U.S.N.M. type no. 72352.

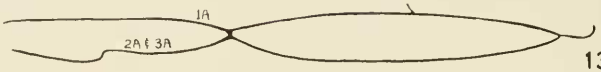
Paratypes.—Same data as for holotype (2 ♀♀); Nelson, N. Z., 3-5-37 (1 ♀, 3 ♂♂); Nelson, N. Z., 10-37 (2 ♀♀); from piripiri, – 6 43, Nelson No. 927 (4 ♀♀). In the U. S. National Museum and Department of Scientific and Industrial Research, Entomology Division, Nelson, New Zealand.



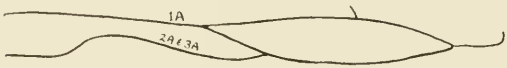
11



12



13



14

Fig. 11, forewing of *Notofenusa surosa*. Fig. 12, forewing of *Ucona acaenae*. Fig. 13, anal cell of forewing of *Trichotaxonus coquimbensis*. Fig. 14, anal cell of forewing of *Antholcus varinervius*.

Discussion.—This sawfly feeds on species of *Acaena* (Rosaceae), the majority of species of which are found in South America and New Zealand. The host is also known in New Zealand as piripiri, hutiwai, and bidibidi. In the late 1920's, this sawfly from Chile was found feeding on this plant, and, because it could be easily transported and reared in large numbers, it was introduced into New Zealand in 1928 for use in biological control. Several introductions were carried out up to 1940, and in some areas populations persisted up to four years after release. However, it is not known to have survived in the country.

Following are a list of papers dealing with this insect under the name *Antholcus varinervis:*

Miller, D. 1928. New Zealand Jour. Agr. 37: 49 (note on S. Amer. study for eventual introduction).
Joseph, C. 1929. Rev. Univ. Santiago, 14: 708–726 (biology).
Miller, D. 1929. Rpt. Dept. Sci. Indus. Res., New Zealand, p. 19 (note on introduction).
Joseph, C. 1930. Rev. Univ. Santiago 15: 862–867 (transport to N. Z.).
Miller, D. 1930. Rpt. Dept. Sci. Indus. Res., New Zealand, p. 35.
Miller, D. 1931. Rpt. Dept. Sci. Indus. Res., New Zealand, p. 20.
Miller, D. 1932. Rpt. Dept. Sci. Indus. Res., New Zealand, p. 17.
Janvier, H. 1933. Ann. Sci. Nat., Zool. 16: 256–268 (biology).
Miller, D. 1933. Rpt. Dept. Sci. Indus. Res., New Zealand, p. 4.
Anonymous. 1933. Nature 131: 283–284 (note on importation).
Miller, D. 1936. New Zealand Jour. Sci. Tech. 18: 584.
Miller, D. 1938. Rpt. Cawthron Institute, p. 29.

Valentine, E. W. 1970. New Zealand Ent. 4: 52–62 (list of phytophagous Hymenoptera of New Zealand).

Miller, D. 1970. New Zealand, Dept. Sci. Indus. Res., Inf. Ser. No. 74, pp. 60–67 (insects of *Acaena;* biology and history of "*A. varinervis*" in New Zealand).

The species name, *acaenae*, is taken from its host plant.

Genera of Tenthredinidae in Chile

Six genera of Tenthredinidae are now known from Chile. Strangely, members of the subfamily Selandriinae are absent, yet it is the dominant group in South America. The genera bear a closer resemblance to Nearctic forms than to the sawflies of other parts of South America. The following key will distinguish the genera of this family known from Chile.

1. Veins M and 1m-cu of forewing divergent (fig. 11) [small black species less than 5 mm in length; tarsal claws with 1 or 2 outer teeth and basal lobe] 2
— Veins M and 1m-cu of forewing parallel (fig. 12) [larger, bicolored species; tarsal claw bifid or trifid, with or without basal lobe] 3
2. Antenna stout, apical 4 segments reduced, together about as long as third segment; vein 2A & 3A of forewing complete, connected to 1A by crossvein (as in fig. 14) [1 introduced species, *C. cerasi* (L.), on pear and other Rosaceae] .... *Caliroa* O. Costa
— Antenna slender, segments gradually decreasing in length; vein 2A & 3A of forewing atrophied, leaving anal cell petiolate (fig. 11) [minute species, less than 4 mm long; possibly leafminers; *N. surosa* (Konow) and several unidentified species] .... *Notofenusa* Benson
3. Vein 2A & 3A of forewing complete, either fused to 1A at center or connected to 1A by an oblique crossvein (figs. 13, 14) 4
— Vein 2A & 3A of forewing atrophied, leaving anal cell petiolate; only basal stub of 2A & 3A present which is curved up at apex (fig. 12) 5
4. Head, thorax, and legs covered with long, erect, black hairs; tarsal claws trifid [*T. coquimbensis* (Spinola)] .... *Trichotaxonus* Rohwer
— Hairs of body short, inconspicuous; tarsal claws bifid, with basal lobe [*A. varinervius* (Spinola)] .... *Antholcus* Konow
5. Tarsal claws with basal lobe; antenna stout, less than twice head width [species yellowish and black; includes *P. lorata* Konow, *P. limbata* (Enderlein), *P. antarctica* (Malaise), and several unidentified species] .... *Periclista* Konow
— Tarsal claws without basal lobe; antenna long, slender, nearly three times width of head [red and black species; *U. acaenae* Smith] .... *Ucona* Smith

Acknowledgments

The cooperation of the following made this paper possible: E. W. Valentine, Department of Scientific and Industrial Research, Entomology Division, Nelson, New Zealand, for providing specimens, references, and information on *Ucona acaenae*; D. W. Webb, Illinois Natural History Survey, Urbana, and P. Arnaud, Jr., California Academy of Sciences, San Francisco, for providing additional specimens of Chilean sawflies.

References

Konow, F. 1904. Ein neues Tenthrediniden-Genus (Hym.). Ztschr. System. Hym. Dipt. 4:3–4.

Smith, D. R. 1973. The sawfly tribe Lycaotini in South America (Hymenoptera: Tenthredinidae). Pan-Pacific Ent. 49:93–101.

Spinola, M. 1951. Hymenoptera. *In* Gay, C., Historia fisica y politica de Chile, Zoologica, v. 6, pp. 153–572.

TWO NEW SPECIES OF THE GENUS METACHROMA CHEVROLAT (COLEOPTERA: CHRYSOMELIDAE)

Doris H. Blake

Department of Entomology, Smithsonian Institution, Washington, D. C. 20560

ABSTRACT—*Metachroma* **rhizophorae** from the Panama Canal Zone and British Honduras and *M.* **angusticolle** from Illinois, new species, are described.

Since my revision of the genus *Metachroma* was published in December 1970, 2 new species of that genus have come to light; 1 from Chicago, Illinois and the other collected by Dr. Daniel Simberloff of Florida State University on mangrove (*Rhizophora mangle* L.) in the Panama Canal.

Metachroma rhizophorae Blake, new species
fig. 1

From 4 to 5 mm in length, elongate oblong oval, shining yellowish or reddish brown with dark occipital spot, 4 more or less elongate dark spots across pronotum, and irregular dark markings from humerus down along side of elytra, antennae with apical joints 7–11 mostly dark, pronotum finely punctate, elytra more coarsely and striately punctate.

Head with interocular space less than half width of head, eyes large, no sulcus separating front from clypeus, front indistinctly punctate, occiput more distinctly punctate, yellow brown with a dark occipital spot, in females covering more of back of head and down front and about eyes, clypeus shallowly emarginate over labrum, jaws large and shining piceous. Antennae with 5 apical joints wider and darker than basal joints and extending below humeri. Prothorax about a third wider than long, convex, with arcuate sides, a small tooth at each corner and narrow explanate margin, surface shining, finely and not densely punctate, varying from pale to deep yellowish brown with 4 more or less elongate piceous spots across, the two inner ones being larger and longer, margins in female dark.